5.0 ENVIRONMENTAL CONSEQUENCES

5.1 INTRODUCTION

This section of the EIS will identify and analyze potential environmental impacts that may result from implementation of the Proposed Action Alternative I Construction and Operation of the NBACC Facility by DHS at Fort Detrick, Maryland, on a Site Adjacent to Existing USAMRIID Facilities and Alternative II (No Action). Consequences of the Proposed Action and the No Action Alternative on the public, on workers, and the environment will be considered, including direct, indirect, and cumulative effects.

Such an analysis involves detailing the potential impacts associated with the implementation of the Proposed Action and Alternative II (No Action) that are reasonably foreseeable but may not necessarily occur. That is, “consequences” refers to the results of an event or events without consideration of probability. Where possible and appropriate, potential events will be characterized both in terms of their potential consequences and the probability that they will occur.

Section 5.2 identifies the potential impacts to the affected environment associated with the implementation of the Proposed Action and the No Action Alternative. Section 5.3 presents a comparison of the potential environmental impacts associated with these alternatives.

5.2 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION AND THE NO ACTION ALTERNATIVE

5.2.1 LAND USE

The impacts of the Proposed Action Alternative I Construction and Operation of the NBACC Facility by DHS at Fort Detrick, Maryland, on a Site Adjacent to Existing USAMRIID Facilities on land use will be negligible to minor. It is consistent with the adopted Fort Detrick Master Plan, which designates that area for administrative and research activities as noted in Section 4.1 (USAG, 2003a). As a Federal government site, the local plans and planning policies of the City of Frederick do not apply to Fort Detrick. Development of the property for the NBACC Facility is consistent with the city’s classification of Fort Detrick as Institutional.

Direct land use impacts resulting from construction and operation of the NBACC Facility will include conversion of previously undeveloped open land to urbanized, paved surfaces and an increase in activity levels in this area of the Installation. In addition, stormwater management measures to control additional runoff from the site of the proposed NBACC Facility may require construction of new ponds or reconfiguration of existing ponds elsewhere on Area A of Fort Detrick (see Section 5.2.5.3). These negligible to minor impacts will be offset by positive impacts on land use. The proposed NBACC Facility will be an attractive, landscaped building that will enhance the appearance of this part of the Installation and complement future Installation development. In addition, forestation amounting to 1.06 acres will be undertaken at a designated forest block within Fort Detrick to satisfy MDNR forest conservation requirements, as noted in Section 2.3.1.5.

Under the No Action Alternative, the proposed NBACC Facility would not be constructed, and its negligible to minor land use impacts would not occur. However, the site would continue to be

designated for administrative or research activities associated with Federal agency biodefense programs in the Installation Master Plan (i.e., the NIBC), and another facility may be constructed on the site instead.

5.2.2 CLIMATE

Neither the Proposed Action nor the No Action Alternative will impact the local climate.

5.2.3 GEOLOGY

Geologic impacts of the Proposed Action will be negligible to minor and mitigable. During the construction phase of the proposed NBACC Facility, the negligible to minor potential for sinkhole formation will be mitigated by adherence to good structural design practices, and potential impacts to topography and stormwater runoff patterns will be mitigated through use of BMPs. During the operational phase, the potential for groundwater contamination will be mitigated by engineering controls and adherence to SOPs.

Sinkholes, fracture traces, and lineaments must be considered for any development project at Fort Detrick because of underlying limestone formations, as noted in Section 4.3.3 and Section 4.3.4. In areas prone to potential sinkhole formation, uncontrolled development could result in significant consequences. Surface loading, surface drainage and subsurface flows, and soil conditions are among the considerations that should be addressed. The presence of sinkholes or fracture traces may also impact water resources by providing pathways for potential contamination of groundwater.

The geologic conditions at the site are considered adequate for development of the proposed NBACC Facility. The closest sinkhole is approximately 1,300 ft. to the west. However, a fracture trace was identified in the central portion of the site, based on the photogeologic analysis discussed in Section 4.3.4. A planned geotechnical investigation (see Section 4.3.3) will identify approaches to mitigate impacts of potential sinkhole development on the proposed NBACC Facility site. The project will affect recharge patterns of the local aquifer system, but no change in groundwater quality or groundwater contamination is anticipated, as discussed in Section 5.2.5.2.

Sedimentation from erosion during construction and increased stormwater runoff following completion of the project will occur, due to site disturbance and the addition of impervious surfaces. Such impacts will be mitigated through adherence to BMPs for construction (e.g., silt fencing and dust control) and compliance with MDE stormwater management and sediment and erosion control regulations.

Significant damage to the proposed NBACC Facility resulting from earthquakes will be very unlikely. As noted in Section 4.3.5, Fort Detrick is located within an area that is subject to minor damage due to distant earthquakes.

Under the No Action Alternative the proposed NBACC Facility would not be built, and the geological impacts discussed above would not occur. However, the site may be developed in the future for another biodefense research use, as noted in Section 5.2.1.

5.2.4 SOILS

The impacts of the Proposed Action Alternative I Construction and Operation of the NBACC Facility by DHS at Fort Detrick, Maryland, on a Site Adjacent to Existing USAMRIID Facilities on soils will be negligible to minor and mitigable. During the construction phase of the NBACC Facility, minor soil erosion will occur where the ground cover is removed. That impact will be temporary and, as discussed in Section 2.3.1.4, application of BMPs during construction will prevent excessive erosion due to excessive stormwater runoff or high winds. The proposed site of the NBACC Facility is underlain by Duffield soils, predominantly silt loams (see Section 4.4), which do not pose any special restrictions for development and erosion control.

Operation of the proposed NBACC Facility, as discussed in Section 2.3.4, does not involve activities that disturb soils. Potential soil erosion due to excessive stormwater runoff will be mitigated by adherence to stormwater management requirements as determined by MDE. Thus, the Proposed Action will have negligible impacts on soils during the operational phase.

Under the No Action Alternative the NBACC Facility would not be constructed on the proposed site, and the potential negligible to minor impacts to soils would not occur.

5.2.5 WATER RESOURCES

5.2.5.1 Surface Water

Potential impacts of the Proposed Action on surface waters will be negligible to minor and mitigable. Potential sedimentation in surface waters could occur during construction of the proposed NBACC Facility if excessive stormwater runoff results in erosion from the site. Under the Proposed Action such sediment impacts may affect Monocacy River Tributary #9 (Detrick Branch), which was discussed in Section 4.5.1. Adherence to BMPs during the construction phase in accordance with MDE standards will mitigate this impact, as discussed in Section 5.2.5.3 below. Thus, the Proposed Action may have temporary, negligible to minor impacts on surface waters during the construction phase.

During operation of the proposed NBACC Facility, average daily water supply withdrawals from the Monocacy River by the Fort Detrick WTP are estimated to increase by approximately 0.04 mgd (0.06 cfs) to provide water for the laboratory operations and for the increased steam production by the Installation incinerators and steam boilers. As indicated in Table 2-2, this represents an approximately 2.5 percent increase relative to the projected future baseline Installation consumption, which includes water supply withdrawals for projects currently under construction and the planned RCI and NIAID IRF (NIH and USAG, 2003).

The impact of NBACC Facility operation on the flow of the Monocacy River will be minor and limited in extent, since most of the increased water withdrawals will be returned to the Monocacy River as treated wastewater effluent through the Fort Detrick WWTP (see Section 2.3.3.1) at a point approximately ¼ mile downstream from the WTP. Water losses within the Fort Detrick water distribution and treatment systems will be minor (USAG, 2003a).

The impact of NBACC Facility operation on water quality in the Monocacy River also will be minor. Designation of the Monocacy River as Use IV-P determines the amount of pollutants this water body can receive (see Section 4.5.1), which provides the basis for pollutant discharge

limits in the NPDES Permit for the Fort Detrick WWTP. The existing Fort Detrick WWTP meets or exceeds all relevant NPDES restrictions, as discussed in Section 4.15.1.4. Furthermore, qualitative aspects of the treated wastewater from the proposed NBACC Facility, including toxicological properties, are not likely to differ from the current wastewater processed at the WWTP. All wastes originating from BSL-3 and BSL-4 activities at the NBACC Facility will be sterilized prior to discharge to the sanitary sewer system. Sufficient treatment capacity is available to accommodate the sanitary wastewater and sterilized laboratory wastewater discharges from the proposed NBACC Facility. The projected total sanitary wastewater flow will average 0.88 mgd when the NBACC Facility is operational (see Table 2-2), well within the WWTP capacity of 2.0 mgd. Accordingly, the potential impacts to aquatic life in the Monocacy River are likely to be negligible. The Proposed Action will have a minor impact on surface waters during the operational phase, mitigated by adherence to the WWTP permit restrictions.

Under the No Action Alternative, the minor impacts to surface water resulting from Construction and Operation of the NBACC Facility would not occur.

5.2.5.2 Groundwater

The Proposed Action will have minor impacts on groundwater resources, mitigated by compliance with groundwater protection requirements mandated under RCRA (40 CFR 261-270), CERCLA (40 CFR Parts 300-399), and SDWA (42 USC § 300(f) et seq. and 40 CFR Part 144). The SDWA requires state agencies to identify and protect critical aquifer areas.

During the construction phase of the proposed NBACC Facility, it is unlikely that a water supply aquifer would be penetrated during excavation for the foundation or utility connections. Potential impacts to aquifers will be mitigated by good construction practices determined by DHS construction contract terms and contract management. During the operational phase, local patterns in aquifer recharge will be altered from an increase in impervious surface area. Groundwater quality could be adversely impacted if wastewater, chemical spills or other contamination entered the aquifer. This is unlikely due to requirements for redundant containment facilities both inside and outside the proposed NBACC Facility (e.g., multiple-walled wastewater tanks), as discussed in Section 4.15.4. Any ASTs or USTs used at the proposed NBACC Facility will be equipped with the required leak detection to prevent contamination of groundwater. If pesticides are used at the NBACC Facility site during the operational phase of the Proposed Action, procedures are in place to prevent groundwater contamination (see Section 4.16.2).

Under the No Action Alternative the negligible impacts to groundwater associated with the Proposed Action would not occur.

5.2.5.3 Stormwater

The potential stormwater impacts of the Proposed Action will be minor and mitigable. The Proposed Action will increase the area covered by impervious surfaces by approximately 4.15 acres, as noted in Table 2-1. This will result in increased rates and volumes of stormwater runoff from the proposed NBACC Facility site. Stormwater management practices and control measures will be implemented to mitigate potential adverse impacts resulting from the increased stormwater runoff during both the construction and operation phases of the proposed NBACC Facility. Upgrading or expansion of the stormwater management system for the site,

including the drainage channels, culverts, and stormwater retention ponds, will comply with standards established by MDE (see Section 2.3.1.4) and will be in accordance with Fort Detrick Regulation 420-74, *Facilities Engineering-Storm Water Management*.

No adverse impacts to floodplains are anticipated from the implementation of the Proposed Action. The site of the proposed NBACC Facility is approximately 2,600 ft. east of the nearest 100-year floodplain (Federal Emergency Management Agency, 1978).

Under the No Action Alternative, the NBACC Facility would not be constructed, and potential hydrologic impacts would not occur. However, the site may be developed for another biodefense research facility in the future, as noted in Section 5.2.1.

5.2.5.4 Drinking Water Supplies

The Proposed Action will have minor impacts on utility water supply, mitigated by implementation of water conservation measures. During the operational phase of the proposed NBACC Facility, as noted in Section 5.2.5.1, average daily water supply withdrawals from the Monocacy River by the Fort Detrick WTP are estimated to increase by approximately 0.04 mgd (0.06 cfs). This increment, in addition to increases for projects currently under construction and the planned RCI and NIAID IRF (NIH and USAG, 2003), will increase average daily total water consumption to approximately 1.50 mgd. This will be well within the treatment process capacity of the Fort Detrick WTP, and it will constitute approximately 75 percent of the 2.0 mgd limit for withdrawals from the Monocacy River under the Installation's Water Allocation Permit (see Section 4.5.1 and Section 4.5.4). At times of drought conditions, water supply limitations may be imposed. Water conservation measures will mitigate such impacts.

USAG has requested Frederick County to include Fort Detrick in its 50 year plan for supplying water to the County. Frederick County has begun upgrading its New Design Water Treatment Plant from its current 6.6mgd capacity to 25mgd and ultimately to 45mgd. The plant will take raw water from the Potomac River. As part of the planning process, USAG has asked that its water requirements be included, ultimately 4mgd. The County is presently conducting a feasibility study to determine how best to serve Fort Detrick using a dedicated pipeline from the County system. The capacity of the line will handle the current and future needs of Fort Detrick, including the proposed NBACC Facility. After the study is complete, USAG and the County will enter formal negotiations for water service. As the Installation grows, the need for fire suppression will be included in infrastructure designs, and the use of additional water storage towers or fire pumps will be considered.

Under the No Action Alternative, the minor impacts to drinking water would not occur.

5.2.6 WETLANDS

Wetland resources are not likely to be impacted by construction and operation of the proposed NBACC Facility. The closest wetland is Wetland W-5, approximately 2,300 ft. to the northeast (see Section 4.6). Under the No Action Alternative, the negligible impacts to wetlands would not occur.

5.2.7 PLANT AND ANIMAL ECOLOGY

The impact of the Proposed Action on plant and animal ecology will be negligible and mitigable. The Fort Detrick grounds are not frequented by special status species, as noted in Section 4.7.3. Thus, it is not likely that any Federal or state listed rare, threatened, or endangered species of plants or animals, or any critical habitat, would be adversely impacted by the Proposed Action. However, construction and operation of the proposed NBACC Facility will likely disturb the plant and animal ecology of the immediate area. Some species, particularly birds and deer, will be discouraged from the area through destruction of habitat, dust, erosion, and/or noise. Wildlife that is not mobile enough to avoid construction activity (e.g., reptiles and some small mammals) may be lost. These impacts on the local plant and animal ecology will likely be negligible and will be mitigated by adherence to BMPs. In addition, positive impacts to the local plant and animal ecology resulting from the afforestation and reforestation required under the State Forest Conservation Program (COMAR 08.18.04), as discussed in Section 5.2.1, will partially offset the adverse impacts of construction and operation.

Under the No Action Alternative both the negligible impacts to plant and animal ecology resulting from the Proposed Action and the positive forestation impacts would not occur.

5.2.8 AIR QUALITY

The impacts of the Proposed Action on Air Quality will be negligible to minor and mitigable.

During construction of the proposed NBACC Facility, fugitive dust emissions from excavating, grading, and other ground-disturbing activities could affect air quality on Fort Detrick. Air quality effects are not anticipated off post. Adherence to BMPs (e.g., watering exposed surfaces and covering trucks) will mitigate these emissions. These impacts will likely be temporary, localized, and minor.

Operation of the proposed NBACC Facility is projected to result in a minor increase of emissions of NO_x and SO_x from Fort Detrick. The consumption of utility steam by the proposed NBACC Facility will increase demand on the Installation's boilers by approximately 6.1 percent, as discussed in Section 2.3.2.4. The disposal of general solid waste and special medical wastes generated in the proposed NBACC Facility, as discussed in Section 2.3.3, will increase the loading of the Fort Detrick municipal waste incinerators and medical waste incinerators, respectively, by approximately 1.2 percent and 2.8 percent. However, any increase of air pollutant emissions from these sources will be minimized by adherence to their respective permit limits and operational requirements. Increased air pollutant emissions from the boilers amounting to 25 tpy of NO_x or 100 tpy of SO_x may require a NSR/PSD review in accordance with the CAA and COMAR 26.11.17, as noted in Section 2.3.1.6 and Section 4.8.2 (Mummert, 2004; Paul, 2004; Wolf, 2004a). In accordance with the CAA, a Conformity Analysis is being prepared concurrently with this EIS.

Air quality in the Frederick area also could be impacted by vehicular emissions of air pollutants from supplier deliveries and commuting activities of the workforce during both the construction and operational phases of the proposed NBACC Facility. These vehicular emissions will likely be a negligible increment relative to the total vehicular emissions in the Frederick area for the Proposed Action.

Under the No Action Alternative the negligible to minor impacts to air quality associated with the Proposed Action would not occur.

5.2.9 HISTORICAL AND CULTURAL RESOURCES

Impacts of the proposed NBACC Facility on historical and cultural resources are likely to be negligible and mitigable. The site of the proposed NBACC Facility will be approximately 850 ft. from the closest known historical resource, Building 1412, which is considered eligible for listing in the NRHP (Building 1412 contains existing USAMRIID facilities). The closest NRHP-listed sites to the proposed NBACC Facility are within the Nallin Farm Complex, located approximately 3,000 ft. to the northeast (see Section 4.9.2). The closest eligible archaeological resource, the Stonewall Jackson Beall Site (18FR683), is approximately 1,400 ft. to the southwest (see Section 4.9.3). Adverse impacts to these cultural resources during the construction phase (e.g., fugitive dust) will be negligible, and will be mitigated by adherence to BMPs and to any requirements specified by the SHPO. Adverse impacts are not likely to occur during the operational phase of the proposed NBACC Facility, since the operations will be similar to activities that have been conducted for decades in the existing USAMRIID facilities, with no observed damage to or interference with activities in neighboring structures.

USAG, working with the Maryland SHPO, has primary responsibility for ensuring adherence to the NHPA. As noted in Section 2.3.1.5, the project will require consultation with the SHPO by USAG. Any requirements identified by the SHPO will be followed to mitigate significant impacts to the historical and cultural resources.

The negligible impacts to historic and cultural resources resulting from the Proposed Action would not occur with implementation of the No Action Alternative.

5.2.10 SOCIOECONOMIC ENVIRONMENT

The Proposed Action will have minor beneficial economic impacts for the economies of the City of Frederick and Frederick County. During the construction phase, local vendors, contractors, and construction workers will benefit from work associated with this project. During the operational phase, approximately 120 workers will be assigned to the proposed NBACC Facility. It is anticipated that almost all of the workers will reside in Frederick County, many within the City of Frederick. Their salaries and wages will contribute directly to the local economy. These increments will comprise only a minor component of the projected population and employment growth (approximately 43,000 additional residents and an estimated increase in the employed workforce of 23,000) for Frederick County in the first decade of the 21st century, as discussed in Section 4.10.1.

Construction and operation of the proposed NBACC Facility is not anticipated to have a significant adverse effect on residential property values near Fort Detrick. No significant impacts are anticipated for the attributes that would be perceived as detrimental for property values, i.e., human health and safety, noise, nuisance lighting, and odors.

Under the No Action Alternative, the positive impacts and the negligible adverse impacts to the socioeconomic environment resulting from the Proposed Action would not occur.

5.2.11 NOISE

Noise impacts of the Proposed Action will be negligible to minor and mitigable. Noise from construction activities and subsequent operation of the proposed NBACC Facility may disturb the local plant and animal ecology, as noted in Section 5.2.7. Excessive noise levels could impact the health of the workforce and/or the residents of housing facilities on Fort Detrick or in neighboring communities. The State of Maryland has established environmental noise standards and promulgated regulations defining maximum allowable noise levels for receivers located in industrial, commercial, and residential districts [COMAR 26.02.03.02 B and 26.02.03.03 A (1)].

During the construction phase of the proposed NBACC Facility, operation of power machinery and other construction activities will result in a temporary increase in the noise level in the immediate vicinity of the construction site. Noise impacts on the health of construction workers will be mitigated by adherence to OSHA standards for occupational noise exposure associated with construction (29 CFR 1926.52). Noise impacts on nearby residents will be mitigated by adherence to the regulatory limit for construction activities of 90 decibels determined by the A-weighting method (dBA) at the boundaries of the construction site [COMAR 26.02.03.03 A(2)(a)].

Noise impacts from normal operations at the proposed NBACC Facility will be temporary, localized, and negligible. Activities in the proposed NBACC Facility will be similar to those in laboratory buildings elsewhere on Area A of Fort Detrick. As noted in Section 4.11, sound levels generated by existing Fort Detrick operations were determined to be compatible with nearby residential use. The regulatory limits for noise levels for receivers in residential areas are 65 dBA during daytime hours and 55 dBA at night.

The noisiest recurring operation associated with the proposed NBACC Facility will be the weekly testing of the emergency generator. The impact will be mitigated by limiting the test to one-minute duration, during daylight hours. Potential excessive generator noise levels will also be mitigated by the requirement to enclose the generator within a sound buffering structure. The closest residences to the proposed NBACC Facility will be military housing approximately 1,000 ft. to the east-southeast.

During a power outage, the emergency generator could run for hours. The regulatory noise restrictions would not apply during an emergency situation (COMAR 26.02.03.03 B).

The negligible to minor noise impacts associated with the Proposed Action would not occur, with implementation of the No Action Alternative.

5.2.12 ODORS

The impacts of odors resulting from construction and operation of the proposed NBACC Facility will be minor. During the construction phase, fueling of power equipment will result in petroleum odors, but the effects will be localized, transient, and negligible to minor. Odors generated during the operational phase of the proposed NBACC Facility will be similar to those currently generated in existing NCI-Frederick and USAMRIID laboratories. As noted in Section 4.12, offensive odors resulting from autoclaving, steam sterilization, or laboratory animal activities at those facilities are localized and transient. The potential odors generated by the incinerators and

the boiler plant, discussed in Section 4.12 will increase as a result of the increased loading of these facilities due to the proposed NBACC Facility. However, such increases will comprise a minor increase in the existing plant loadings, as noted in Section 2.3.2 and Section 2.3.3.

The minor odor impacts associated with construction and operation of the proposed NBACC Facility would not occur with implementation of the No Action Alternative.

5.2.13 TRANSPORTATION

The impacts of the Proposed Action on transportation will be minor and mitigable. Construction and operation of the proposed NBACC Facility will increase traffic on Fort Detrick and in areas adjacent to the Installation. During the construction phase contractor personnel, inspectors, and supplier deliveries will temporarily increase vehicular traffic. These impacts may be mitigated by project-specific vehicle access restrictions (e.g., limiting gates and hours). In addition, construction workers may park in Area B and be bused to and from the NBACC Facility site to mitigate potential impacts to parking and traffic. During the operational phase commuting laboratory workers, official visitors, and supplier deliveries will permanently increase traffic by an estimated 240 vpd, assuming a total of two trips per day per NBACC Facility employee.

Increased traffic will add to existing congestion of Porter Street and Ditto Avenue, the primary access roads to the site. This will comprise a minor increase to the current loading of these roadways (approximately 2 percent of the current 12,200 vpd during peak traffic hours on the Installation noted in Section 4.13.2). However, the additional traffic will likely be concentrated at the morning and afternoon commuting times when traffic is heaviest. The increased congestion could affect traffic flow through the Main Gate and the Opossumtown Gate, two of the Installation's main entries. USAG is making improvements to the Main Gate, Opossumtown Gate, Old Farm Gate, and Installation roadways that are expected to provide partial mitigation of traffic congestion on the Installation and in areas adjacent to Fort Detrick (USAG, 2003a). Representatives of USAG, the City of Frederick, Frederick County, and the Maryland State Highway Administration are evaluating current and future possible solutions to mitigate traffic congestion in and around Fort Detrick (Bennett, 2004).

Workers in the proposed NBACC Facility and official visitors will use the NBACC Parking Lot, currently under design, to be located immediately east of the proposed NBACC Facility. During the construction phase of the proposed NBACC Facility, the contractor will have responsibility to ensure that construction activities and worker parking will not interfere with traffic flow. Thus, the impact of the proposed NBACC Facility on parking will be minor.

The minor impacts to transportation associated with the Proposed Action would not occur with implementation of the No Action Alternative.

5.2.14 ENERGY RESOURCES

Construction and operation of the proposed NBACC Facility will have negligible impacts on energy resources relative to energy consumption in the Frederick area. During the construction phase, the impact of diesel fuel demands for power equipment and movement of materials, and gasoline for workforce commuting, will be temporary and negligible to minor relative to the consumption of these fuels in the Frederick area. As discussed in Section 2.3.2, the estimated utility requirements for operation of the NBACC Facility represent minor increases relative to the

current total Fort Detrick usage (approximately 6.1 percent of the steam, 3.6 percent of the electrical power, and 8.4 percent of the natural gas). The natural gas and fuel oil consumption associated with operation of the proposed NBACC Facility is an indirect impact, representing increased demand for steam from the boilers and increased incinerator operation. Energy management practices of the proposed NBACC Facility will follow guidelines set forth in EO 13123, *Greening the Government Through Efficient Energy Management*, 08 June 1999.

The minor impacts to energy resources associated with the Proposed Action would not occur with implementation of the No Action Alternative.

5.2.15 POLLUTION PREVENTION AND WASTE STREAM MANAGEMENT

The Proposed Action will have negligible to minor impacts on waste management at Fort Detrick. Construction of the proposed NBACC Facility will have a negligible impact on Fort Detrick's waste management systems. The construction contractor will have responsibility for adhering to regulatory requirements for the disposal of wastewater, solid waste, hazardous waste, and construction debris outside Fort Detrick and in accordance with Federal, State, and local regulatory requirements, as noted in Section 2.3.1. During the construction phase of the proposed NBACC Facility, pollution prevention will be practiced through source reduction and conservation in accordance with EO 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*, 14 September 1998.

Operation of the proposed NBACC Facility will likely have negligible to minor impact on the Installation's waste management systems. All potentially infectious wastewater generated in the BSL-3 and BSL-4 laboratories will undergo the required steam sterilization or chemical disinfection before discharge directly into the sanitary sewers. Since the proposed NBACC Facility will not use the LSS (see Section 4.15.1.2) and will be located approximately 800 ft. from the nearest portion of the LSS, there will be no impacts on the LSS from construction or operation of the proposed NBACC Facility. The projected quantities of wastewater, special medical waste, general solid waste, hazardous waste, and radiological waste noted in Section 2.3.3 (see Table 2-2) represent negligible to minor increments, well within existing waste management system capacities and Federal and state permit limits, as discussed in Section 4.15.

Furthermore, hazardous materials management in the proposed NBACC Facility will include an active pollution-prevention program in accordance with DHS and USAG policies. Pollution prevention will be practiced through source reduction and conservation or by elimination of toxic materials during the operational phase of the Proposed Action.

Under the No Action Alternative, the negligible impacts to waste management systems at Fort Detrick would not occur.

5.2.16 HAZARDOUS MATERIAL MANAGEMENT

The impact of Hazardous Material Management associated with the Proposed Action will be negligible. During the operational phase of the proposed NBACC Facility, DHS and USAG oversight of hazardous material handling will ensure compliance with applicable OSHA safety regulations and RCRA regulations for hazardous waste treatment, storage, and disposal. During

the construction phase, adherence to contract provisions will ensure proper management of hazardous materials.

Under the No Action Alternative, the negligible impacts to hazardous material management systems at Fort Detrick would not occur.

5.2.17 HUMAN HEALTH AND SAFETY

The impact of the Proposed Action on human health and safety will be negligible. Human health and safety impacts may potentially occur both during construction and operation of the proposed NBACC Facility. Compliance with OSHA regulations will mitigate adverse impacts to the workforce during construction.

The potential impacts to human health and safety would not occur under the No Action Alternative.

5.2.17.1 Occupational Health and Safety

The impact of the Proposed Action on occupational health and safety will be negligible and mitigable. During the construction phase of the proposed NBACC Facility, impacts to the health and safety of construction workers will be minimized by adherence to accepted work standards and OSHA regulations (29 CFR 1926, *Safety and Health Regulations for Construction*). Similarly, no significant impacts to the health and safety of workforce are anticipated during the operational phase. The biodefense research and bioforensics activities at the proposed NBACC Facility will involve using etiologic agents that are capable of causing human disease and the use of laboratory animals that may be infected with etiologic agents transmissible to humans. The inherent risks of these activities to worker health and safety will be mitigated by adherence to engineering controls and work practices to contain and isolate etiologic agents described in the BMBL (CDC/NIH, 1999) and numerous other Federal, state, and local regulations (see Sections 2.3.4.1 and 2.3.4.2). The limited number of documented cases of LAIs during the last 10 years in biomedical laboratories throughout the U.S. demonstrates the effectiveness of these mitigation measures (Johnson, 2003; USAMRMC, 2004; Harding and Byers, 2000; CDC/NIH, 1999; Sewell, 1995).

In addition, regular medical monitoring will be provided for those employees engaged in work with etiologic agents. To the extent that licensed or investigational vaccines are available, individuals working in those laboratories will be offered immunization (see Section 2.3.4.3). However, vaccines do not exist for most of the BSL-4 agents. Workers unable to undergo vaccination for medical reasons will not be permitted to work with the associated etiologic agents and will not be permitted entry into containment suites where vaccinations are required.

The negligible impacts to occupational health and safety would not occur under the No Action Alternative.

5.2.17.2 Public Health and Safety

The impact of the Proposed Action on public health and safety during construction of the proposed NBACC Facility will be negligible to minor. Increased heavy truck traffic may result in increased vehicular or pedestrian accidents.

Based on the hazard analyses presented in Appendix G, the probabilities of adverse impacts on human health and the environment occurring during operation of the proposed NBACC Facility are remote, given the planned operational and facility safeguards.

- Release of an etiologic agent to the environment (for example, by emission with exhaust air from the biological containment facilities or by escape of an infected laboratory animal) could potentially expose workers elsewhere on Fort Detrick or nearby residents to risk of infection or disease. These risks are mitigated by adherence to BMBL standards (CDC/NIH, 1999) for engineering controls and work practices for biological containment, as discussed in Section 2.3.4.1 and Section 2.3.4.2. There have been no documented instances of infection or disease in communities adjacent to biodefense research facilities similar to the proposed NBACC Facility resulting from the conduct of these types of activities. See also Appendix G, Sections 1 and 2.
- Accidents during shipment of etiologic agents to or from the proposed NBACC Facility could potentially expose members of the public outside Fort Detrick to risk of infection or disease. These risks are mitigated by adherence to the regulations for the transportation of etiologic agents and registration of facilities, as discussed in Section 2.3.4.5. There have been no known instances of infection or disease resulting from accidents related to transportation during more than 60 years of shipping of infectious materials through postal services or regulated common carriers (USAMRMC, 2004). See also Appendix G, Section 3.
- DHS will conduct a Vulnerability Assessment to evaluate the risks of potential terrorist acts on the proposed NBACC Facility. The Vulnerability Assessment and its associated details will not be available for public review. Potential exposure of the public to an etiologic agent due to incidents such as theft or sabotage will be mitigated by the biosurety program for the proposed NBACC Facility incorporating agent accountability, security, personnel reliability, and safety, as discussed in Section 2.3.4.8. See also Appendix G, Section 4.
- The risk of accidental release of a biological agent to the environment due to an external accident or natural disaster would be mitigated by redundancy of safety equipment and emergency procedures, operational safeguards, and monitoring systems, as discussed in Section 2.3.4.3. See also Appendix G, Section 5.
- The risk of inadvertent transmission of diseases from biosafety laboratory workers at the proposed NBACC Facility to other workers, family members, or the general public is remote. LAIs are rare, as indicated by the limited number of documented LAIs during the last 10 years in biomedical laboratories throughout the U.S. Training of personnel, management and oversight of laboratory operations, and medical surveillance of personnel, as described in Section 2.3.4, are the principal components for preventing inadvertent transmission of infectious agents. See also Appendix G, Section 6.

Prior to operation of the NBACC Facility, a mutual aid agreement will be prepared between Frederick County and DHS to ensure compliance with community right-to-know statutes and regulations (USC 42, Title 42, Chapter 116, *Emergency Planning and Community Right-To-Know Act*). This agreement will include provisions for emergency response and notification for members of the public.

The negligible impacts to public health and safety associated with the proposed NBACC Facility would not occur under the No Action Alternative. However, implementation of the No Action Alternative would also eliminate the positive impacts to public health and safety that will accrue if the research activities planned for the NBACC Facility are conducted. The planned activities for the NBACC Facility include research directed towards understanding classical, engineered,

and emerging threats from biological terrorism; providing the scientific basis and operational capability to prevent technology surprise, detect events rapidly, respond effectively, and attribute use; and developing technologies and systems to protect the people, agriculture, and economy of the United States against biological terrorism.

5.2.18 ENVIRONMENTAL JUSTICE

The potential impacts of the Proposed Action to Environmental Justice will be negligible and mitigable. During the construction phase of the Proposed Action, minority and/or low-income communities could be economically impacted if they are excluded from the economic benefits arising from construction activities. Such adverse Environmental Justice impacts are mitigated by the requirement that all vendors and contractors participating in the construction and operational phases of the Proposed Action must adhere to Equal Employment Opportunity and Affirmative Action considerations as identified in 29 CFR 1608.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low Income Populations*, requires Federal agencies to consider whether their projects will result in disproportionate adverse impacts on minority or low-income populations. The U.S. Census considers a poverty area as one where at least 20 percent of the population lives below the poverty level, which it defines as the income level (based on family size, age of householder, and the number of children under 18 years of age) that is considered too low to meet essential living requirements, without regard to the local cost of living. As discussed in Section 4.10.1, the Frederick area is not considered a poverty area.

It is unlikely that the Proposed Action will have proportionately greater impact on disadvantaged (e.g., minority, low income) populations than the No Action Alternative.

5.2.19 CUMULATIVE IMPACTS

The CEQ regulations implementing NEPA define cumulative impacts to the environment as those effects resulting from the impact of the Proposed Action when combined with past, present, and future actions (40 CFR 1508.7). Thus, cumulative impacts are the sum of all direct and indirect impacts, both adverse and positive, that result from the incremental impacts of the Proposed Action when added to other past, present, and reasonably foreseeable future actions regardless of source. Cumulative impacts may be accrued over time and/or in conjunction with impacts from other activities in the area (40 CFR 1508.25).

The potential cumulative impacts of the Proposed Action will be negligible to minor and mitigable. This includes impacts on human health and safety, transportation, water resources (drinking water supply and stormwater management), noise, and air quality.

Research activities planned for the proposed NBACC Facility will be similar to those at the existing USAMRIID facilities and the NIAID IRF, currently under design. USAMRIID has been operating for more than 30 years with negligible impact on the environment and human health (USAMRMC, 2004; USAMRMC, 2001). Its potential adverse impacts on human health and safety have been effectively mitigated by adherence to the BMBL engineering measures and safety practices (CDC/NIH, 1999) and environmental regulations discussed in Sections 2.3.3 and 2.3.4.

The cumulative risks to the public that would be posed by operation of USAMRIID laboratories, the NIAID IRF, and the proposed NBACC Facility, all in close proximity, were addressed in Appendix G. Each of these facilities, as an individual entity, previously has been shown to pose negligible risks to public health. Hazard assessments of the cumulative risks to the public for the three facilities concluded that the individual impacts were, at most, additive. That is, the total impact from all three facilities is not more than the sum of the (negligible) individual impacts, and therefore, negligible itself.

For example, potential simultaneous release of highly infectious biological agents from two (let alone three) separate BSL-3 or BSL-4 laboratories is not a credible event given the multiple engineering controls and procedural safeguards at each facility. Even in that highly unlikely event, the ground level concentrations of a hypothetical released biological agent would be negligible at all points outside the boundaries of Fort Detrick (see Appendix G, Section 7.A). The hazard analyses are similar for simultaneous escape of infected animals from two or three separate laboratories; simultaneous release of biological agents from shipments of infectious materials to or from two or three separate laboratories; release of a biological agent due to an external accident or disaster simultaneously affecting two or three laboratories; or inadvertent transmission of diseases via simultaneous public contact with workers from two or three separate laboratories.

The increased traffic and parking demand anticipated for operation of the proposed NBACC Facility noted in Section 5.2.13 will be in addition to similar increases associated with the NIAID IRF and other projects for Area A of Fort Detrick that are currently under design or construction. However, changes to the existing roadways and traffic patterns on Area A of Fort Detrick and a central parking lot for the NIBC are being planned. Future traffic studies and ongoing discussions with USAG and local/state governments will identify infrastructural improvements to the Fort Detrick transportation network to reduce negative impacts on local traffic patterns (USAG, 2003a). Therefore, the cumulative transportation impact of the Proposed Action will be minor.

Although operation of the proposed NBACC Facility will add to existing and planned demands for water supply, the cumulative total consumption will be within the existing capacity of the Fort Detrick water supply system, as discussed in Section 2.3.2.1 and Section 5.2.5.4. However, drought conditions in the Monocacy River, as discussed in Section 4.5.1, and limitations of the existing water distribution system with respect to pipe size and pressures, as discussed in Section 4.5.4.3, could potentially interfere with the delivery of the required water supply to all users at Fort Detrick. Therefore, minor cumulative impacts to water supply will result from the Proposed Action. Water conservation measures and development of additional water supply sources will mitigate the cumulative impacts resulting from drought conditions.

Construction of the proposed NBACC Facility will result in increased rates and volumes of stormwater runoff, as indicated in Section 5.2.5.3. Since this will be in addition to increases resulting from other projects currently under design or construction, negligible to minor cumulative impacts to stormwater management may result from the Proposed Action. The study evaluating stormwater management options for the entire south-central portion of Area A noted in Section 4.5.3 will lead to a new regional stormwater management plan for the entire south-central portion of Area A.

Baseline noise levels due to traffic on arterial streets adjoining Area A will likely increase with time. This external noise, in addition to noise associated with operation of the proposed NBACC Facility and other projects currently under design or construction, is expected to have negligible cumulative noise impacts for residents of military housing on Area A or adjoining homes. The most new significant noise sources, testing of the emergency generators, will be scheduled to avoid simultaneous tests.

Operation of the proposed NBACC Facility will increase the demands for natural gas (for the boilers and incinerators), as noted in Section 5.2.14. This, in addition to similar impacts from earlier approved projects currently under construction or in design, will increase natural gas consumption by approximately 18 percent relative to FY02. This energy demand may be mitigated by increased use of fuel oil in the boilers, in view of recent significant increases in natural gas prices (see Section 4.12). However, that would lead to minor increases in air pollutant emissions of NO_x and SO_x from the boilers relative to current levels. Such increases of air pollutant emissions will be minimized by adherence to the respective permit limits and operational requirements of the boilers. Increased air pollutant emissions from the boilers amounting to 25 tpy of NO_x or 100 tpy of SO_x may require a NSR/PSD review in accordance with the CAA and COMAR 26.11.17, as noted in Section 2.3.1.6 and Section 4.8.2 (Mummert, 2004; Paul, 2004; Wolf, 2004a).

Under the No Action Alternative, the negligible to minor cumulative impacts of the Proposed Action discussed above would not occur. However, the baseline impacts of external developments and projects within Area A of Fort Detrick currently under construction or in design will occur.

5.2.20 PUBLIC OPINION IMPACTS

Public involvement is an important part of the NEPA process and must be encouraged to the maximum extent practicable, in accordance with NEPA regulations [40 CFR 1500.6 and 1506.6(b)]. DHS's diligent efforts to involve stakeholders and the public in the environmental review process for the proposed NBACC Facility are summarized in Section 1.4.

5.3 COMPARISON OF THE PROPOSED ACTION WITH THE NO ACTION ALTERNATIVE

Table 5-1 and Table 5-2 summarize the potential environmental impacts associated with the construction and operation, respectively, of the proposed NBACC Facility. Mitigation measures that will be incorporated in the design of the project are noted in these tables. Table 5-3 provides details of the proposed mitigation measures.

5.3.1 PROPOSED ACTION – CONSTRUCTION AND OPERATION OF THE NATIONAL BIODEFENSE ANALYSIS AND COUNTERMEASURES CENTER FACILITY BY DHS AT FORT DETRICK, MARYLAND, ON A SITE ADJACENT TO EXISTING U.S. ARMY MEDICAL RESEARCH INSTITUTE OF INFECTIOUS DISEASES FACILITIES

No significant adverse environmental impacts are anticipated for implementation of the Proposed Action. During the construction phase, negligible to minor impacts are expected for land use (land disturbance and other construction damage), noise, and transportation (increased traffic and parking demand), geology (potential sinkhole formation), plant and animal ecology, air quality (fugitive dust and vehicular emissions), odors, energy resources, pollution

prevention/ waste management, and occupational health and safety (work-related injuries). Mitigation for the potential adverse impacts will include compliance with regulatory requirements (forestation requirements and OSHA regulations) and adherence to BMPs and DHS contract requirements. Minor positive impacts on the socioeconomic environment are anticipated (local economy).

During the operational phase, significant positive impacts to public health and safety are anticipated from NBACC accomplishing its mission and minor positive impacts are anticipated for the socioeconomic environment (local economy). Minor adverse impacts are expected for transportation (traffic and parking demand), and negligible to minor impacts are expected for human health and safety (worker safety), geology (potential pathways for groundwater contamination), water resources (groundwater recharge, stormwater management, sedimentation in surface waters, and drinking water supply), plant and animal ecology (displacement of deer and/or bird species), air quality (increased pollutant emissions), odors, energy resources (increased consumption), and pollution prevention/waste management.

Mitigation for the potential adverse impacts will include compliance with permit limits, regulatory requirements, and adherence to BMBL and other standards for operational practices. Minor water resources impacts and limitations of the existing water distribution system could be mitigated by establishing an alternate water source, upgrading of the water distribution system, or through water conservation measures. These impacts will be minor for the Proposed Action because of the limited increase in water supply requirements for the proposed NBACC Facility.

5.3.2 ALTERNATIVE II – NO ACTION

Under Alternative II, the proposed NBACC Facility would not be constructed and operated, the environmental impacts associated with Alternative I, as discussed above, would not occur.

Analyses of the environmental consequences of “no action” are required under CEQ regulations [40 CFR 1502.14(d)]. This ensures that changes in the baseline conditions not associated with the Proposed Action, as discussed under Cumulative Impacts in Section 5.2.19, are duly considered. Potential changes to the environmental baseline conditions are discussed above.

Table 5-1. Summary of Potential Environmental Impacts from Construction of the National Biodefense Analysis and Countermeasures Center Facility.

Environmental Attribute	Potential Environmental Impacts Alternative I Construction and Operation of the NBACC Facility by DHS at Fort Detrick, Maryland, on a Site Adjacent to Existing USAMRIID Facilities
Land Use	Negligible to minor impacts from land disturbance, mitigated by adherence to COMAR 15% afforestation requirements
Climate	No impacts to climate.
Geology	Negligible to minor potential for sinkhole formation, mitigated by good structural design practices. Mitigation of potential adverse impacts to topography and stormwater runoff patterns through use of BMPs.
Soils	Temporary, negligible to minor soil erosion in areas where ground cover is removed, mitigated through use of BMPs.
Water Resources	Potential temporary, negligible to minor sedimentation in surface waters, mitigated through use of BMPs. Increased stormwater runoff due to impervious surfaces may require upgrading of stormwater management facilities. Negligible impacts to groundwater, mitigated by compliance with groundwater protection requirements.
Wetlands	Negligible impacts to wetlands.
Plant and Animal Ecology	No critical habitats will be adversely impacted; it is not likely that there will be impacts on special-status species. Negligible impacts to plant and animal species, mitigated by BMPs.
Air Quality	Temporary, localized minor generation of fugitive dust, mitigated through the use of BMPs. Negligible increase of vehicular emissions.
Historic and Cultural Resources	Negligible impacts to archeological or NRHP-listed historic sites, including a nearby NRHP-eligible USAMRIID building, mitigated by BMPs and Maryland SHPO requirements.
Socioeconomic Environment	Minor positive economic impact to the economy of Frederick.
Noise	Temporary localized minor noise expected. Effects on worker hearing mitigated by OSHA compliance; impacts on the public mitigated by adherence to COMAR noise control regulations.
Odors	Transient, localized minor incidence of objectionable odors expected.
Transportation	Minor temporary increased traffic and congestion in the immediate vicinity of construction.
Energy Resources	Negligible impacts to depletable energy resources.
Pollution Prevention and Waste Management	Negligible to minor impact on the waste management system of Fort Detrick. Contractors will be responsible for disposal of construction waste off-site.
Human Health and Safety	Potential negligible impact to construction workers mitigated by compliance with OSHA regulations. Potential negligible impact to the public due to accidents resulting from increased heavy truck traffic.
Environmental Justice	It is unlikely that disproportionate adverse impacts to minority or low-income populations would occur.
Cumulative Impacts	Significant adverse cumulative impacts are not anticipated from construction activities.

THIS PAGE INTENTIONALLY LEFT BLANK

Table 5-2. Summary of Potential Environmental Impacts from Operation of the National Biodefense Analysis and Countermeasures Center Facility.

Environmental Attribute	Potential Environmental Impacts
	Alternative I
	Construction and Operation of the NBACC Facility by DHS at Fort Detrick, Maryland, on a Site Adjacent to Existing USAMRIID Facilities
Land Use	Site is consistent with Fort Detrick Master Plan for land use. Negligible impacts on adjoining land uses.
Climate	No impacts to climate.
Geology	Potential for groundwater contamination, mitigated by engineering controls and adherence to SOPs.
Soils	Negligible soil erosion, mitigated by stormwater management requirements as determined by MDE.
Water Resources	Minor impact on Monocacy River water supply source; Potential water supply limitations for the NBACC Facility during drought; Negligible groundwater contamination mitigated by adherence to construction standards and operational practices for containment of wastewater leakage (e.g., secondary containment). Minor impacts to local groundwater recharge resulting from increased impervious surface area.
Wetlands	Negligible impacts to wetlands.
Plant and Animal Ecology	It is not likely that there will be impacts on special-status species. Negligible disruption of habitat for resident plant and animal species; minimal displacement of deer and some bird species anticipated.
Air Quality	Minor pollutant emissions due to increased use of boilers and incinerators and emergency, mitigated by adherence to air permit requirements. Negligible increase of vehicular emissions due to increased traffic.
Historic and Cultural Resources	Operations not likely to adversely impact the nearby NRHP-eligible USAMRIID building or more distant historical and archeological sites. Potential impacts on historic and cultural resources mitigated by SHPO requirements.
Socioeconomic Environment	Positive minor impacts on local economies. No significant adverse effect on the property values of adjoining residences is anticipated.
Noise	Noise impacts from normal operations expected to be temporary, localized, and negligible. Noise impacts from emergency generator mitigated by use of a noise control enclosure and restrictions on scheduled testing.
Odors	Transient, localized minor incidence of objectionable odors from autoclaving, steam sterilization and laboratory animal operations at the NBACC Facility. Potential minor increased incidence of petroleum odors from boiler plant or incinerator operations.
Transportation	Minor increases of traffic and congestion on the Installation and adjacent areas. Minor increased demand for parking, mitigated by dedicated parking facility.

THIS PAGE INTENTIONALLY LEFT BLAN

Table 5–2. Summary of Potential Environmental Impacts from Operation of the National Biodefense Analysis and Countermeasures Center Facility (continued).

Environmental Attribute	Potential Environmental Impacts
	Alternative I
	Construction and Operation of the NBACC Facility by DHS at Fort Detrick, Maryland, on a Site Adjacent to Existing USAMRIID Facilities
Energy Resources	Minor increases in consumption of natural gas, electrical power, and diesel fuel and resultant increased utility requirements.
Pollution Prevention and Waste Management	Negligible to minor increases in quantities of wastewater, special medical waste, general solid waste, hazardous waste, and radiological waste, mitigated by source reduction. Potential releases of toxic or hazardous materials to the environment mitigated by compliance with permit requirements.
Human Health and Safety	Potential negligible impacts to worker health and safety, mitigated by adherence to safety standards (e.g., BMBL). Negligible impacts to public health and safety from laboratory operations and associated shipment of etiologic agents.
Environmental Justice	No disproportionate adverse impacts to minority or low-income populations are anticipated.
Cumulative Impacts	Potential adverse cumulative impacts on human health and safety for operation of USAMRIID, NIAID, and NBACC Facility; mitigated by adherence to BMBL engineering measures and safety practices (CDC/NIH, 1999). Potential minor adverse cumulative impacts on traffic and parking demand for operation of USAMRIID, NIAID and NBACC Facility; mitigated by traffic studies and infrastructural improvements and central NIBC parking lot. Potential minor limitations on the required water supply due to drought conditions in the Monocacy River, mitigated by water conservation measures and development of additional water supply sources. Potential negligible to minor cumulative impacts to stormwater management, mitigated by development and implementation of new stormwater management plan Potential negligible cumulative impacts of increased baseline noise levels, mitigated by scheduling of emergency generator testing.

THIS PAGE INTENTIONALLY LEFT BLANK

Table 5-3. Summary of Mitigation Measures and Mechanisms.

Environmental Attribute	Impact	Mitigation Measure	Mechanism
Land Use	Loss of forested land	1:1 reforestation requirement	DHS financial responsibility. USAG selection of forestation site and oversight of compliance.
	Other land disturbance	15% afforestation requirement	
	Adverse impacts on adjoining land uses	DA and Fort Detrick site-selection regulations will ensure location conforms to Installation land use plans and is compatible with adjoining land uses	
Geology	Potential for sinkhole formation	Good structural design practices and use of BMPs during construction	DHS construction contract terms and construction management
	Potential pathways for groundwater contamination	Engineering controls and adherence to SOPs	DHS and Fort Detrick HMMO oversight during operation
	Potential adverse impacts to topography and stormwater runoff patterns	Use of BMPs during construction	DHS construction contract terms and construction management
Soils	Soil erosion during construction	Use of BMPs during construction	DHS construction contract terms and construction management
		Adherence to MDE stormwater management requirements	USAG Stormwater Management Plan and NPDES Permit Compliance
Water Resources	Sedimentation in surface waters	Use of BMPs during construction	DHS construction contract terms and construction management
		Adherence to MDE stormwater management requirements	USAG Stormwater Management Plan and NPDES Permit Compliance
	Increased stormwater runoff due to impervious surfaces	Adherence to MDE stormwater management requirements	USAG Stormwater Management Plan and NPDES Permit Compliance
	Damage to aquifer during construction	Good construction practices	DHS construction contract terms and construction management
	Potential groundwater contamination during operation	Secondary containment of potential wastewater leakage	DHS design standards, construction contract terms and construction management
Wetlands	Potential encroachment into wetlands	Site-selection regulations	RPPB review of wetland issues
Plant and Animal Ecology	Adverse impacts to plant and animal species	Use of BMPs during construction	DHS construction contract terms and construction management
	Potential development of forested land	Forestation requirements	DHS financial responsibility. USAG selection of forestation site and oversight of compliance.

THIS PAGE INTENTIONALLY LEFT BLANK

Table 5–3. Summary of Mitigation Measures and Mechanisms (continued).

Environmental Attribute	Impact	Mitigation Measure	Mechanism
Air Quality	Fugitive dust	Use of BMPs during construction	DHS construction contract terms
	Pollutant emissions due to increased use of boilers and incinerators and emergency generator	Adherence to air permit requirements	USAG permit compliance
Historic and Cultural Resources	Encroachment on archeological or NRHP-listed historic sites	Site-selection regulations	USAG compliance with DA regulations and SHPO requirements
	Damage to historic and cultural resources	Use of BMPs during construction and adherence to Maryland SHPO requirements	DHS construction contract terms and USAG compliance with DA regulations and SHPO requirements
Noise	Noise effects on construction worker hearing	OSHA compliance	DHS construction contract terms
	Impacts on public health during construction	Adherence to noise control regulations.	DHS construction contract terms
	Emergency generator noise	Noise control enclosure, restrictions on scheduled testing	DHS and USAG compliance with schedule
Transportation	Increased traffic and congestion	Infrastructural improvements	Traffic management plan
	Construction worker parking	Contract requirements	DHS construction contract terms
	NBACC Facility worker parking	Dedicated parking facility	DHS construction contract management
Pollution Prevention and Waste Management	Construction wastes	Contract requirements for disposal of all wastes outside Fort Detrick and in accordance with regulatory requirements	DHS construction contract terms
	Wastes generated by NBACC Facility operations	Pollution prevention through source reduction and conservation.	USAG and DHS compliance with USAG, CDC, and DA requirements
Human Health and Safety	Potential construction-related injury	Compliance with OSHA regulations	DHS construction contract terms
	NBACC Facility worker health and safety	Adherence to BMBL and OSHA safety standards	DHS compliance with CDC/NIH requirements and OSHA/USAG standards

THIS

PAGE INTENTIONALLY LEFT BLANK